CRF Errors Corrected by the STIC Systems Branch

Serial Number: __US/09/833222A__

CRF Processing Date: __10/05/01__
Edited by: __mø__
Verified by: _____ (ST

☐ Changed a file from non-ASCII to ASCII

☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.

6

☐ Edited a format error in the Current Application Data section, specifically:
_____

ENTERED

☐ Edited the Current Application Data section with the actual current number. The number inputted by th
applicant was ☐ the prior application data; or ☐ other _____.

☐ Added the mandatory heading and subheadings for "Current Application Data".

☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integ

☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:
_____

☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:
_____

☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:
_____

☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

☐ Inserted colons after headings/subheadings. Headings edited included:
_____

☐ Deleted extra, invalid, headings used by an applicant, specifically:
_____

☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end o
☐ page numbers throughout text; ☐ other invalid text, such as_____

☐ Inserted mandatory headings, specifically: _____

☐ Corrected an obvious error in the response, specifically:
_____

☐ Edited identifiers where upper case is used but lower case is required, or vice versa.

☑ Corrected an error in the Number of Sequences field, specifically:
Field 400 indicated sequence length of "one" — actually,
the sequence length was 14

☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (er
due to a PatentIn bug). Sequences corrected: _____

☐ Other:
_____
_____
_____

*Examiner: The above corrections must be communicated to the applicant in the first Offic
Action. DO NOT send a copy of this form.

3/1/9

OIPE

RAW SEQUENCE LISTING   DATE: 10/05/2001
PATENT APPLICATION: US/09/833,222A   TIME: 11:31:05

Input Set : A:\PTO.MH.txt
Output Set: N:\CRF3\10052001\I833222A.raw

ENTERED

```
        4 <110> APPLICANT: Qin, Ning
        5        Codd, Ellen
        7 <120> TITLE OF INVENTION: cDNA encoding the Calcium Channel Alpha2Delta-4 Subunit
        9 <130> FILE REFERENCE: calcium channel alpha2delta-4 subunit
C-->   11 <140> CURRENT APPLICATION NUMBER: US/09/833,222A
C-->   12 <141> CURRENT FILING DATE: 2001-04-01
       14 <160> NUMBER OF SEQ ID NOS: 14
       16 <170> SOFTWARE: PatentIn Ver. 2.1
       18 <210> SEQ ID NO: 1
       19 <211> LENGTH: 27
       20 <212> TYPE: DNA
       21 <213> ORGANISM: Artificial Sequence
       23 <220> FEATURE:
       24 <223> OTHER INFORMATION: Description of Artificial Sequence:
       25        oligonucleotide
       27 <400> SEQUENCE: 1
       28 caggggctgg gctgcactgt ggtggtg                                27
       31 <210> SEQ ID NO: 2
       32 <211> LENGTH: 27
       33 <212> TYPE: DNA
       34 <213> ORGANISM: Artificial Sequence
       36 <220> FEATURE:
       37 <223> OTHER INFORMATION: Description of Artificial Sequence:
       38        oligonucleotide
       40 <400> SEQUENCE: 2
       41 ctctcgggac ctcttggaga tcagaat                                27
       44 <210> SEQ ID NO: 3
       45 <211> LENGTH: 27
       46 <212> TYPE: DNA
       47 <213> ORGANISM: Artificial Sequence
       49 <220> FEATURE:
       50 <223> OTHER INFORMATION: Description of Artificial Sequence:
       51        oligonucleotide
       53 <400> SEQUENCE: 3
       54 ccatcctaat acgactcact atagggc                                27
       57 <210> SEQ ID NO: 4
       58 <211> LENGTH: 23
       59 <212> TYPE: DNA
       60 <213> ORGANISM: Artificial Sequence
       62 <220> FEATURE:
       63 <223> OTHER INFORMATION: Description of Artificial Sequence:
       64        oligonucleotide
       66 <400> SEQUENCE: 4
       67 actcactata gggctcgagc ggc                                    23
       70 <210> SEQ ID NO: 5
       71 <211> LENGTH: 24
       72 <212> TYPE: DNA
```

```
73 <213> ORGANISM: Artificial Sequence
75 <220> FEATURE:
76 <223> OTHER INFORMATION: Description of Artificial Sequence:
77      oligonucleotide
79 <400> SEQUENCE: 5
80 caggctctga gcctgcgagc tgag                                      24
83 <210> SEQ ID NO: 6
84 <211> LENGTH: 26
85 <212> TYPE: DNA
86 <213> ORGANISM: Artificial Sequence
88 <220> FEATURE:
89 <223> OTHER INFORMATION: Description of Artificial Sequence:
90      oligonucleotide
92 <400> SEQUENCE: 6
93 atgtcgtggt cgtggttgat gaccat                                    26
96 <210> SEQ ID NO: 7
97 <211> LENGTH: 17
98 <212> TYPE: PRT
99 <213> ORGANISM: Artificial Sequence
101 <220> FEATURE:
102 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
103      peptide
105 <400> SEQUENCE: 7
106 Lys Val Ser Asp Arg Lys Phe Leu Thr Pro Glu Asp Glu Ala Ser Val
107   1               5               10              15
109 Cys
113 <210> SEQ ID NO: 8
114 <211> LENGTH: 18
115 <212> TYPE: PRT
116 <213> ORGANISM: Artificial Sequence
118 <220> FEATURE:
119 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
120      peptide
122 <400> SEQUENCE: 8
123 Arg Val Glu Ala Asp Arg Gly Trp Ala Gly Phe Ser Ser Pro Asn Pro
124   1               5               10              15
126 Leu Cys
130 <210> SEQ ID NO: 9
131 <211> LENGTH: 3486
132 <212> TYPE: DNA
133 <213> ORGANISM: Homo sapiens
135 <400> SEQUENCE: 9
136 caggtacatt cagcagagcc caagtctgcc actctccaac cagaggccct ggaagcttgg 60
137 ggtcaagctc agtcctgggc tcgtcagccc ggccccacaa ccctcagcag gagaacctgc 120
138 cgaggacatt cagcacacag cagtgcagcc gctgggtcct gagggttctc cgcgtctcct 180
139 gcccaggcca tggctgtagc tttagggaca aggaggaggg acagagtgaa gctatgggct 240
140 gacaccttcg gcggggacct gtataacact gtgaccaaat actcaggctc tctcttgctg 300
141 cagaagaagt acaaggatgt ggagtccagt ctgaagatcg aggaggtgga tggcttggag 360
142 ctggtgagga agttctcaga ggacatggag aacatgctgc ggaggaaagt cgaggcggtc 420
```

```
143 cagaatctgg tggaagctgc cgaggaggcc gacctgaacc acgaattcaa tgaatccctg 480
144 gtgttcgact attacaactc ggtcctgatc aacgagaggg acgagaaggg caacttcgtg 540
145 gagctgggcg ccgagttcct cctggagtcc aatgctcact tcagcaacct gccggtgaac 600
146 acctccatca gcagcgtgca gctgcccacc aacgtgtaca acaaagaccc agatattta 660
147 aatggagtct acatgtctga agccttgaat gctgtcttcg tggagaactt ccagagagac 720
148 ccaacgttga cctggcaata ttttggcagt gcaactggat tcttcaggat ctatccaggt 780
149 ataaaatgga cacctgatga gaatggagtc attacttttg actgccgaaa ccgcggctgg 840
150 tacattcaag ctgctacttc tcccaaggac atagtgattt tggtggacgt gagcggcagt 900
151 atgaaggggc tgaggatgac tattgccaag cacaccatca ccaccatctt ggacaccctg 960
152 ggggagaatg acttcgttaa tatcatagcg tacaatgact acgtccatta catcgagcct 1020
153 tgttttaaag ggatcctcgt ccaggcggac cgagacaatc gagagcattt caaactgctg 1080
154 gtggaggagt tgatggtcaa aggtgtgggg gtcgtggacc aagccctgag agaagccttc 1140
155 cagatcctga agcagttcca agaggccaag caaggaagcc tctgcaacca ggccatcatg 1200
156 ctcatcagcg acggcgccgt ggaggactac gagccggtgt ttgagaagta taactggcca 1260
157 gactgtaagg tccgagtttt cacttacctc attgggagag aagtgtcttt tgctgaccgc 1320
158 atgaagtgga ttgcatgcaa caacaaaggc tactacacgc agatctcaac gctggcggac 1380
159 acccaggaga acgtgatgga atacctgcac gtgctcagcc gccccatggt catcaaccac 1440
160 gaccacgaca tcatctggac agaggcctac atggacagca agctcctcag ctcgcaggct 1500
161 cagagcctga cactgctcac cactgtggcc atgccagtct tcagcaagaa gaacgaaacg 1560
162 cgatcccatg gcattctcct gggtgtggtg ggctcagatg tggccctgag agagctgatg 1620
163 aagctggcgc cccggtacaa gcttggagtg cacggatacg cctttctgaa caccaacaat 1680
164 ggctacatcc tctcccatcc cgacctccgg ccctgtaca gagaggggaa gaaactaaaa 1740
165 cccaaaccta actacaacag tgtggatctc tccgaagtgg agtgggaaga ccaggctgaa 1800
166 tctctgagaa cagccatgat caatagggaa acaggtactc tctcgatgga tgtgaaggtt 1860
167 ccgatggata aagggaagcg agttctttc ctgaccaatg actacttctt cacggacatc 1920
168 agcgacaccc ctttcagttt gggggcggtg ctgtcccggg gccacggaga atacatcctt 1980
169 ctggggaaca cgtctgtgga agaaggcctg catgacttgc ttcacccaga cctggccctg 2040
170 gccggtgact ggatctactg catcacagat attgacccag accaccggaa gctcagccag 2100
171 ctagaggcca tgatccgctt cctcaccagg aaggacccag acctggagtg tgacgaggag 2160
172 ctggtccggg aggtgctgtt tgacgcggtg gtgacagccc ccatggaagc ctactggaca 2220
173 gcgctggccc tcaacatgtc cgaggagtct gaacacgtgg tggacatggc cttcctgggc 2280
174 acccgggctg gcctcctgag aagcagcttg ttcgtgggct ccgagaaggt ctccgacagg 2340
175 aagttcctga cacctgagga cgaggccagc gtgttcaccc tggaccgctt cccgctgtgg 2400
176 taccgccagg cctcagagca tcctgctggc agcttcgtct tcaacctccg ctgggcagaa 2460
177 ggaccagaaa gtgcgggtga acccatggtg gtgacggcaa gcacagctgt ggcggtgacc 2520
178 gtggacaaga ggacagccat tgctgcagcc gcgggcgtcc aaatgaagct ggaattcctc 2580
179 cagcgcaaat tctgggcggc aacgcggcag tgcagcactg tggatgggcc gtacacacag 2640
180 agctgcgagg acagtgatct ggactgcttc gtcatcgaca caacgggtt cattctgatc 2700
181 tccaagaggt cccgagagac gggaagattt ctgggggagg tggatggtgc tgtcctgacc 2760
182 cagctgctca gcatgggggt gttcagccaa gtgactatgt atgactatca ggccatgtgc 2820
183 aaaccctcga gtcaccacca cagtgcagcc cagcccctgg tcagcccaat ttctgccttc 2880
184 ttgacggcga ccaggtggct gctgcaggag ctggtgctgt tcctgctgga gtggagtgtc 2940
185 tggggctcct ggtacgacag aggggccgag gccaaagtg tcttccatca ctcccacaaa 3000
186 cacaagaagc aggacccgct gcagccctgc gacacggagt accccgtgtt cgtgtaccag 3060
187 ccggccatcc gggaggccaa cgggatcgtg gagtgcgggc cctgccagaa ggtatttgtg 3120
188 gtgcagcaga ttcccaacag taacctcctc ctcctggtga cagaccccac ctgtgactgc 3180
189 agcatcttcc caccagtgct gcaggaggcg acagaagtca aatataatgc ctctgtcaaa 3240
190 tgtgaccgga tgcgctccca gaagctccgc cggcgaccag actcctgcca cgccttccat 3300
191 ccagaggtgc gggttgaggc ggatcgaggg tgggctggat tttcatcccc aaaccctctg 3360
```

```
192 tgcctgggtc tgtgcccctg cagacaggag catataggga tgccaatgaa cacacctgtg 3420
193 cctgtgcttc tcgggggaaa cattcgcgtt tatgccctgt gacactgtga tataataaga 3480
194 aacaga                                                              3486
197 <210> SEQ ID NO: 10
198 <211> LENGTH: 1090
199 <212> TYPE: PRT
200 <213> ORGANISM: Homo sapiens
202 <400> SEQUENCE: 10
203 Met Ala Val Ala Leu Gly Thr Arg Arg Arg Asp Arg Val Lys Leu Trp
204  1               5                  10                  15
206 Ala Asp Thr Phe Gly Gly Asp Leu Tyr Asn Thr Val Thr Lys Tyr Ser
207             20                  25                  30
209 Gly Ser Leu Leu Leu Gln Lys Lys Tyr Lys Asp Val Glu Ser Ser Leu
210         35                  40                  45
212 Lys Ile Glu Glu Val Asp Gly Leu Glu Leu Val Arg Lys Phe Ser Glu
213     50                  55                  60
215 Asp Met Glu Asn Met Leu Arg Arg Lys Val Glu Ala Val Gln Asn Leu
216  65                  70                  75                  80
218 Val Glu Ala Ala Glu Glu Ala Asp Leu Asn His Glu Phe Asn Glu Ser
219             85                  90                  95
221 Leu Val Phe Asp Tyr Tyr Asn Ser Val Leu Ile Asn Glu Arg Asp Glu
222             100                 105                 110
224 Lys Gly Asn Phe Val Glu Leu Gly Ala Glu Phe Leu Leu Glu Ser Asn
225         115                 120                 125
227 Ala His Phe Ser Asn Leu Pro Val Asn Thr Ser Ile Ser Ser Val Gln
228     130                 135                 140
230 Leu Pro Thr Asn Val Tyr Asn Lys Asp Pro Asp Ile Leu Asn Gly Val
231 145                 150                 155                 160
233 Tyr Met Ser Glu Ala Leu Asn Ala Val Phe Val Glu Asn Phe Gln Arg
234             165                 170                 175
236 Asp Pro Thr Leu Thr Trp Gln Tyr Phe Gly Ser Ala Thr Gly Phe Phe
237             180                 185                 190
239 Arg Ile Tyr Pro Gly Ile Lys Trp Thr Pro Asp Glu Asn Gly Val Ile
240         195                 200                 205
242 Thr Phe Asp Cys Arg Asn Arg Gly Trp Tyr Ile Gln Ala Ala Thr Ser
243     210                 215                 220
245 Pro Lys Asp Ile Val Ile Leu Val Asp Val Ser Gly Ser Met Lys Gly
246 225                 230                 235                 240
248 Leu Arg Met Thr Ile Ala Lys His Thr Ile Thr Thr Ile Leu Asp Thr
249             245                 250                 255
251 Leu Gly Glu Asn Asp Phe Val Asn Ile Ile Ala Tyr Asn Asp Tyr Val
252             260                 265                 270
254 His Tyr Ile Glu Pro Cys Phe Lys Gly Ile Leu Val Gln Ala Asp Arg
255         275                 280                 285
257 Asp Asn Arg Glu His Phe Lys Leu Leu Val Glu Glu Leu Met Val Lys
258     290                 295                 300
260 Gly Val Gly Val Val Asp Gln Ala Leu Arg Glu Ala Phe Gln Ile Leu
261 305                 310                 315                 320
263 Lys Gln Phe Gln Glu Ala Lys Gln Gly Ser Leu Cys Asn Gln Ala Ile
```

RAW SEQUENCE LISTING   DATE: 10/05/2001
PATENT APPLICATION: US/09/833,222A TIME: 11:31:05

Input Set : A:\PTO.MH.txt
Output Set: N:\CRF3\10052001\I833222A.raw

```
264                    325                  330                  335
266 Met Leu Ile Ser Asp Gly Ala Val Glu Asp Tyr Glu Pro Val Phe Glu
267                    340                · 345                  350
269 Lys Tyr Asn Trp Pro Asp Cys Lys Val Arg Val Phe Thr Tyr Leu Ile
270                    355                  360                  365
272 Gly Arg Glu Val Ser Phe Ala Asp Arg Met Lys Trp Ile Ala Cys Asn
273     370                    375                  380
275 Asn Lys Gly Tyr Tyr Thr Gln Ile Ser Thr Leu Ala Asp Thr Gln Glu
276 385                    390                  395                  400
278 Asn Val Met Glu Tyr Leu His Val Leu Ser Arg Pro Met Val Ile Asn
279                    405                  410                  415
281 His Asp His Asp Ile Ile Trp Thr Glu Ala Tyr Met Asp Ser Lys Leu
282                    420                  425 ·                430
284 Leu Ser Ser Gln Ala Gln Ser Leu Thr Leu Leu Thr Thr Val Ala Met
285         435                    440                  445
287 Pro Val Phe Ser Lys Lys Asn Glu Thr Arg Ser His Gly Ile Leu Leu
288     450                    455                  460
290 Gly Val Val Gly Ser Asp Val Ala Leu Arg Glu Leu Met Lys Leu Ala
291 465                    470                  475                  480
293 Pro Arg Tyr Lys Leu Gly Val His Gly Tyr Ala Phe Leu Asn Thr Asn
294                    485                  490                  495
296 Asn Gly Tyr Ile Leu Ser His Pro Asp Leu Arg Pro Leu Tyr Arg Glu
297                    500                  505                  510
299 Gly Lys Lys Leu Lys Pro Lys Pro Asn Tyr Asn Ser Val Asp Leu Ser
300         515                    520                  525
302 Glu Val Glu Trp Glu Asp Gln Ala Glu Ser Leu Arg Thr Ala Met Ile
303     530                    535                  540
305 Asn Arg Glu Thr Gly Thr Leu Ser Met Asp Val Lys Val Pro Met Asp
306 545                    550                  555                  560
308 Lys Gly Lys Arg Val Leu Phe Leu Thr Asn Asp Tyr Phe Phe Thr Asp
309                    565                  570                  575
311 Ile Ser Asp Thr Pro Phe Ser Leu Gly Ala Val Leu Ser Arg Gly His
312         580                    585                  590
314 Gly Glu Tyr Ile Leu Leu Gly Asn Thr Ser Val Glu Glu Gly Leu His
315         595                    600                  605
317 Asp Leu Leu His Pro Asp Leu Ala Leu Ala Gly Asp Trp Ile Tyr Cys
318     610                    615                  620
320 Ile Thr Asp Ile Asp Pro Asp His Arg Lys Leu Ser Gln Leu Glu Ala
321 625                    630                  635 ·                640
323 Met Ile Arg Phe Leu Thr Arg Lys Asp Pro Asp Leu Glu Cys Asp Glu
324         645                    650                  655
326 Glu Leu Val Arg Glu Val Leu Phe Asp Ala Val Val Thr Ala Pro Met
327         660                    . 665                670
329 Glu Ala Tyr Trp Thr Ala Leu Ala Leu Asn Met Ser Glu Glu Ser Glu
330         675                    680                  685
332 His Val Val Asp Met Ala Phe Leu Gly Thr Arg Ala Gly Leu Leu Arg
333     690                    695                  700
335 Ser Ser Leu Phe Val Gly Ser Glu Lys Val Ser Asp Arg Lys Phe Leu
336 705                    710                  715                  720
```

VERIFICATION SUMMARY   DATE: 10/05/2001
PATENT APPLICATION: **US/09/833,222A**   TIME: 11:31:06

Input Set ·: **A:\PTO.MH.txt**
Output Set: **N:\CRF3\10052001\I833222A.raw**

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date